

What is claimed is:

1. An image generating device for generating images capturing a movable object moving within a virtual three-dimensional space from a movable viewpoint in said virtual three-dimensional space, comprising: movement means for controlling the movement of said camera viewpoint upon utilizing the position relationship between the observable point set in relation to said movable body and the line of sight of the current camera viewpoint.

2. An image generating device according to claim 1, wherein said virtual three-dimensional space is a game space, and said movable body is an enemy in a gun shooting game enacting in said game space.

3. An image generating device according to claim 2, further comprising: display means for displaying said game space on a screen; a gun unit capable of producing signals toward said screen by the player manipulating the trigger; a sensor for detecting the arrival position of said signals on the screen; said display means; and game implementing means for implementing a gun shooting game between said enemy and player based on said arrival position.

4. An image generating device according to claim 3, wherein the position of said observable point is at a different position

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than that of said movable body, further comprising: observable point moving means for moving this observable point toward said movable body for each display of one frame of said image.

5. An image generating device according to claim 4, wherein said observable point moving means is means for moving, for each display of one frame of said image and along the straight line distance connecting said observable point and the position of said movable object, said observable point toward said movable object side in prescribed distances of the direct distance thereof.

6. An image generating device according to claim 4, wherein said observable point moving means comprises: means for operating the open angle between the current line of sight extending from said camera viewpoint and the line extending from the camera viewpoint through said observable point; means for operating a prescribed rotational angle from such open angle; and means for rotating, for each display of one frame of said image, said camera viewpoint toward said observable point side at said rotational angle.

7. An image generating device according to claim 3, wherein said moving means comprises: judging means for judging the occurrence of specific circumstances of the relative position relationship between said camera viewpoint, which changes in accordance with manipulations of said player, and said

observable point; and viewpoint movement control means for controlling the position of said camera viewpoint so as to continuously capture the position of said observable point.

8. An image generating device according to claim 7, wherein said viewpoint movement control means is means for performing position control pursuant to motion movement for moving said camera viewpoint, and rotational movement in accordance with the angle formed by the direction toward said observable point from the position of the camera viewpoint after said movement and the line-of-sight direction of said camera viewpoint before said movement.

9. An image generating device according to claim 8, wherein said viewpoint movement control means includes viewpoint rotation means for rotating said camera viewpoint toward said observable point side in accordance with said angle.

10. An image generating device according to claim 9, wherein said viewpoint rotation means is means for rotating said camera viewpoint toward said observable point side based on an angle in which said angle is increased/decreased a prescribed value.

11. An image generating device according to claim 9, comprising avoidance manipulation means for a player to manipulate the character, which is a simulation of such player on a screen, to avoid the bullet fired from said enemy; wherein

said judging means is means for judging whether said avoidance manipulation means is in a manipulative state or not.

12. An image generating device for displaying on a display images for a player to play a gun shooting game with an enemy character existing in a virtual game space, said image generating device comprising: image processing means for performing image display suggesting in advance to the player an attack made by said enemy character to said player.

13. An image generating device according to claim 12, wherein said image display is a display of a bullet fired from said enemy character and flying toward said player in the actual space.

14. An image generating device according to claim 13, wherein the display of said bullet is a display of the bullet flying in an arc.

15. An image generating device for displaying on a display images for a player to play a gun shooting game with an enemy character existing in a virtual game space, said image generating device comprising: AI processing means for executing AI processing incorporating emotions of said character influenced between circumstances, evaluation/determination, and factors of behaviors in said game.

16. An image generating device according to claim 15, wherein

said factors of emotions are represented by emotional elements of fear and anger in relation to said game.

17. An image generating device according to claim 16, wherein said AI processing means includes means for performing processing to reflect the results of behavior based on said factors of behaviors to said factors of emotions.

18. An image generating device for generating images by representing a movable object simulating a person and moving inside a virtual three-dimensional space as a plurality of parts connected via connection points, said image generating device comprising: first specifying means for specifying a subpart on the terminal side and a main part on the central side with respect to two adjacent parts among said plurality of parts; first operating means for operating the impulse of the subpart motion communicated to the main part under the presumption that the connection point of said subpart to said main part is a fixed point; first repeating means for repeating, in a recurring manner, the movements of said first specifying means and said first operating means from the terminal side of said movable object to the central side thereof; second specifying means for specifying a main part on the central side and a subpart on the terminal side with respect to two adjacent parts among said plurality of parts; second operating means for operating the impulse of the main part motion communicated to the subpart; and second repeating means for repeating, in a recurring manner,

the movements of said second specifying means and said second operating means from the central side of said movable object to the terminal side thereof.

19. An image generating device according to claim 18, wherein at least one of said first and second operating means is means for executing seasoning-like operational processing upon simulating said person.

20. An image generating device according to claim 19, wherein said seasoning-like operational processing includes at least one of, or a plurality of operations among: operation for applying a reverse moment, which is caused pursuant to restrictions of the movement of joints of said person, to said parts; operation for reflecting the external force inflicted on said person to said parts; operation for correcting the unnaturalness of the position of said parts caused pursuant to differences in calculations; operation for applying the internal force moment caused by physical characteristics of said person to said parts; and control operation of the rotation or movement speed of said parts for reflecting expressions caused by the mentality of said person to said parts.

21. An image generating device for generating image data which interpolates the motion between two types of motions of the movable object moving within a virtual three-dimensional space; comprising:

operating means for discretely operating the function curve of the motion between said two types of motions pursuant to the current rotational angle, target rotational angle, and number of frames required to reach the target rotational angle; and interpolation means for performing motion interpolation based on the operational results of said operating means.

22. An image generating device for generating images requiring the collision judgment between a movable object moving within a virtual three-dimensional space and a structural object arranged in said space, comprising collision judgment means for judging the collision with said movable object while moving said structural object.

23. An image generating device according to claim 22, wherein said collision judgment means is means for judging the collision while moving said structural object in either parallel movement or rotational movement.

24. A storage medium storing a program for executing the respective means of said image generating device.